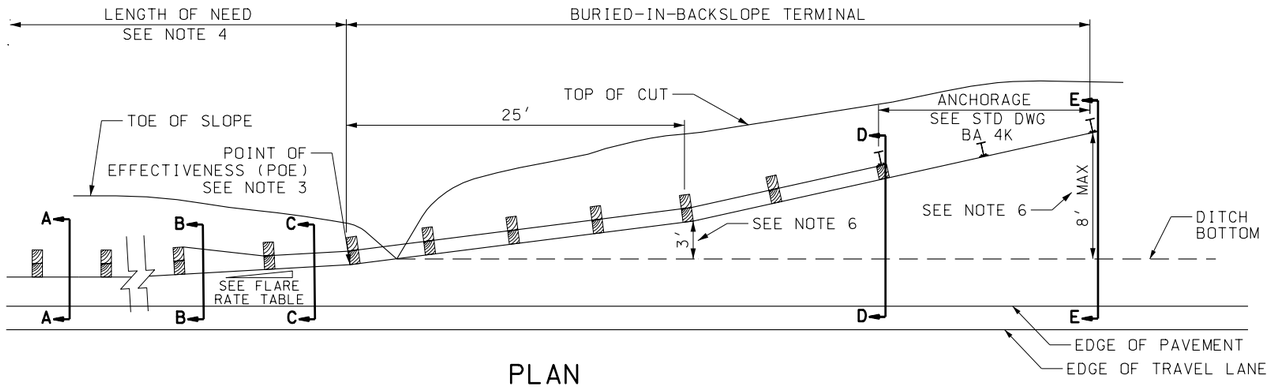
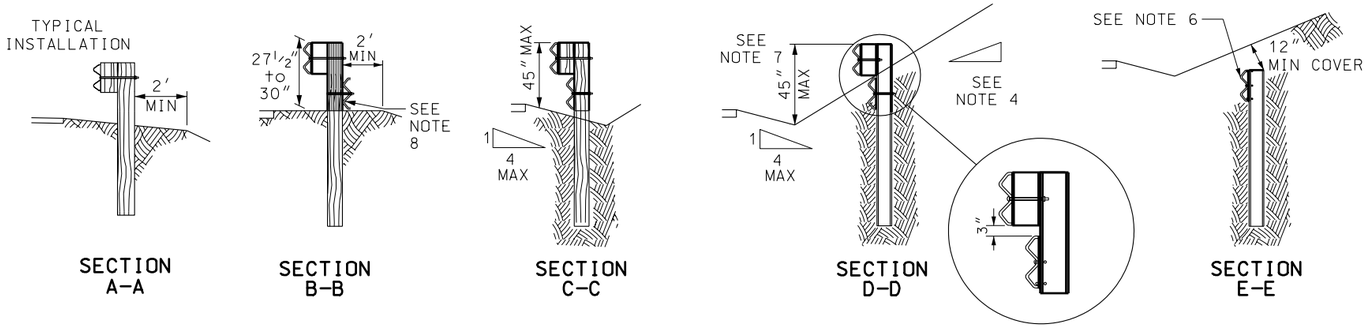
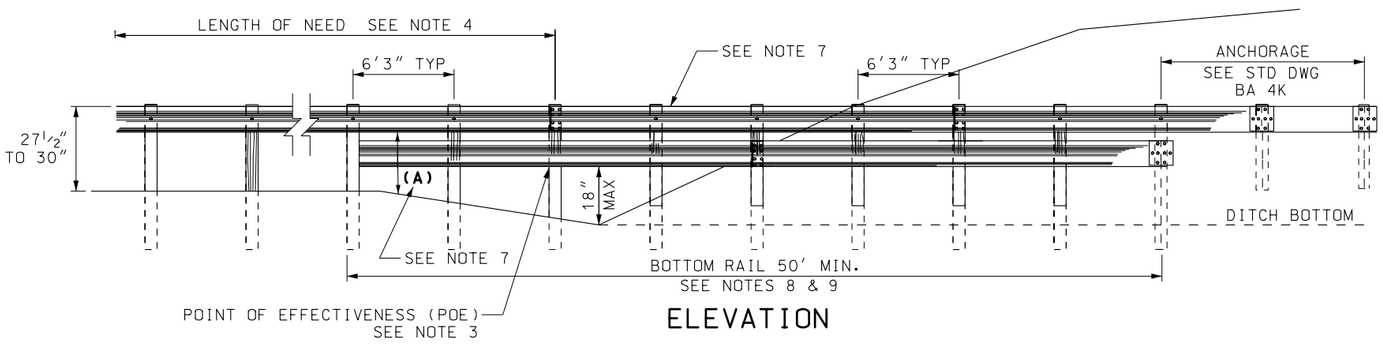
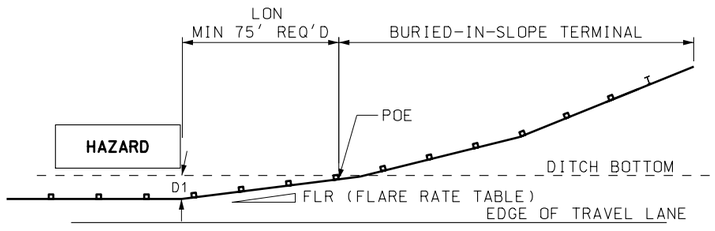



PLAN



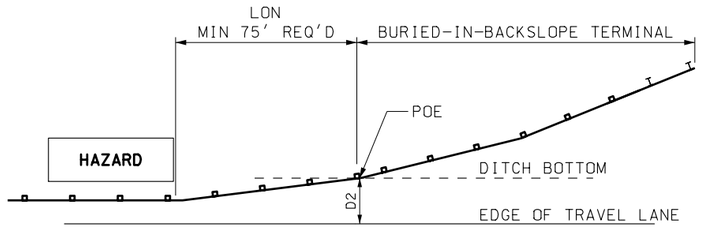

ELEVATION




LON = FLR x D1

USE THIS DETAIL IF BACKSLOPE IS STEEPER THAN 3:1. THIS DETAIL APPLIES AT ALL SPEED LEVELS.

DETAIL A




≥50 MPH "LON" = 450 - (15 x D2)
≤45 MPH "LON" = 250 - (15 x D2)

USE THIS DETAIL IF BACKSLOPE IS 3:1 TO 4:1. SEE NOTE 2.

DETAIL B

**NOTES:**

1. PRIOR TO USING THIS DESIGN, CONSULT AREA SUPERVISOR TO ENSURE NO NEED EXISTS FOR ACCESS BEHIND THE BARRIER INSTALLATION AND THAT DRAINAGE ISSUES ARE ADDRESSED.
2. DO NOT USE THE BURIED-IN-BACKSLOPE TERMINAL IN LOCATIONS WHERE THE BACKSLOPE IS FLATTER THAN 3:1, AND THERE IS NO DITCH OR A NARROW SHALLOW DITCH AND THE TOE OF SLOPE IS WITHIN 20 FEET OF THE TRAVEL LANE.
3. THE POINT OF EFFECTIVENESS (POE) IS AT THE RAIL FACE OF THE FIRST POST OF THE TERMINAL PRIOR TO CROSSING THE DITCH BOTTOM OR TOE OF SLOPE.
4. SEE DETAILS "A" AND/OR "B" FOR LENGTH OF NEED (LON) REQUIREMENTS AND BACKSLOPE REQUIREMENTS.
5. REFER TO STD DWG BA 4K FOR BURIED-IN-BACKSLOPE TERMINAL ANCHORAGE POST DETAILS.
6. INSTALLATION: STARTING AT THE "POE" SOFTLY BEND RAIL ELEMENT 3' MAXIMUM FROM THE TOE OF SLOPE AT THE 25' POINT OF TERMINAL. FROM THE 25' POINT OF THE TERMINAL TO THE END OF THE TERMINAL SOFTLY BEND RAIL BACK UNTIL THE 1' BURIAL HAS BEEN OBTAINED TO A MAXIMUM OF 8' FROM THE TOE OF SLOPE. IF THE MAXIMUM 8' OFFSET IS REACHED AND THE 1' BURIAL HAS NOT BEEN ACHIEVED, THE BURIED-IN-BACKSLOPE TERMINAL WILL BE SLOPED DOWN WHERE THE END IS 8' BEHIND THE TOE OF SLOPE AND 1' UNDER THE ORIGINAL GROUND LINE. THE BACK SLOPE AT THE ANCHORAGE POSTS SHOULD LOOK THE SAME AFTER INSTALLATION AS PRIOR TO INSTALLATION.
7. HOLD THE TOP GUARDRAIL ELEMENT CONSTANT WITH THE TYPICAL BARRIER INSTALLATION. WHEN THE BOTTOM OF THE TOP GUARDRAIL ELEMENT EXCEEDS 18", AT ANY POINT OF THE SLOPE, POINT (A) ELEVATION VIEW, GO UP STREAM 1 POST AND ADD A BOTTOM RAIL ELEMENT UNDER THE STANDARD GUARDRAIL ELEMENT. IF THE TOP OF INSTALLATION EXCEEDS 45" FROM THE GROUND, AT ANY POINT IN THE INSTALLATION, THEN BOTH ELEMENTS WILL BE SLOPED DOWN TO MAINTAIN A MAXIMUM HEIGHT OF 45" IN FRONT OF THE TOE OF SLOPE.
8. BEND THE DOWNSTREAM END OF BOTTOM RAIL TO THE BACKSIDE OF THE POST AND BOLT TO POST.
9. USE 96" LONG POSTS, WOOD OR STEEL,WITH THE SAME WIDTH DIMENSIONS AS PER STD DWG BA 4, AT LOCATION REQUIRING BOTTOM RAIL ELEMENT. REFER TO STD DWG BA 4K SPECIFIC STEEL POSTS PLACEMENT REQUIREMENTS MARK ALL 96" POSTS WITH L96 WITH THE SAME METHOD AS DESCRIBED IN NOTE 2 OF STD DWG BA 4A.
10. FIELD DRILLED STEEL POSTS ARE ALLOWED FOR BOTTOM RAIL ELEMENT. USE ZINC RICH PAINT TO COAT FIELD DRILLED HOLES IN POSTS OR RAIL ELEMENTS.
11. INSTALL A STABILIZATION MAT OVER DISTURBED AREA TO CONTROL EROSION.
12. USE IN ESTABLISHED SLOPES. DO NOT BUILD A MOUND TO USE THIS TERMINAL.

| FLARE RATE TABLE | |
|---|---|
| SPEED (MPH) | RATE |
| 40 OR LESS | 9:1 |
| 45 | 10:1 |
| 50 | 11:1 |
| * ≥55 | 12½ :1 |

* FLARE RATE TO BE USED ONLY IN CONJUNCTION WITH A BURIED-IN-BACKSLOPE TERMINAL ON HIGHER SPEED ROADWAYS.

REVISIONS

| NO. | DATE | APPR. | REMARKS |
|---|---|---|---|

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — JAN.01.2005 DATE
CHAIRMAN STANDARDS COMMITTEE APPROVED — JAN.01.2005 DATE
DEPUTY DIRECTOR

W-BEAM GUARDRAIL
BURIED IN BACKSLOPE
TERMINAL WITH
RUB RAIL

STANDARD DRAWING TITLE

STD DWG
BA 4J